

Compact, Wavelength Stabilized Seed Source for Multi-Wavelength Lidar Applications, Phase II

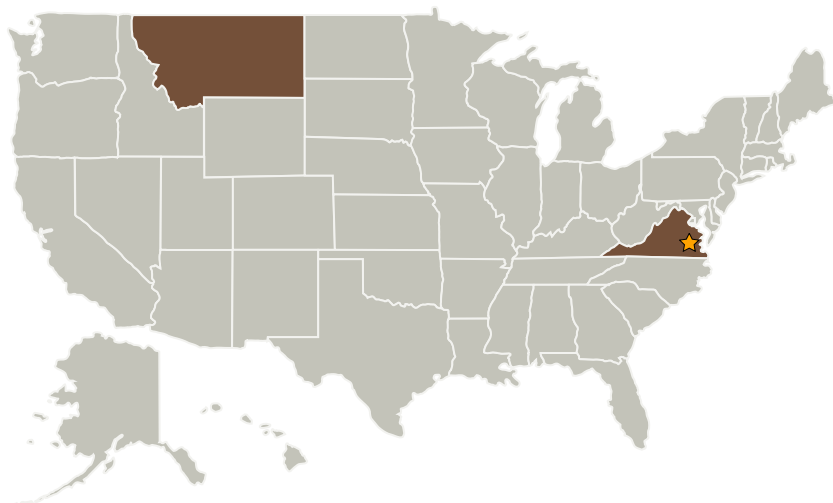
Completed Technology Project (2009 - 2012)



Project Introduction

NASA LaRC is developing a compact, multi-wavelength High Spectral resolution Lidar (HSRL) system designed to measure various optical and microphysical properties of aerosols and clouds. The HSRL system uses a high power, pulsed, seeded Nd:YAG laser, whose seed is wavelength-stabilized to an iodine vapor absorption line. The primary goal of the Phase II effort is to provide a robust, next generation seed laser system which is significantly reduced in size, weight, and required "wall-plug" power for HSRL and other lidar applications. This approach is enabled by use of a suitable compact laser diode source, together with AdvR's integrated Planar Lightwave Circuit (PLC) technology. Furthermore, AdvR's multi-element waveguide technology will be utilized in this Phase II effort to provide a compact 355nm source, derived from the same seed laser, for calibration of the HSRL UV interferometric filter. A compact, next generation seed laser system utilizing AdvR's PLC and UV technology, integrated with a high performance compact laser diode source will advance NASA's lidar systems due to its compact, efficient, and reliable design, thus enabling use on small aircraft and satellites.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
ADVR, Inc.	Supporting Organization	Industry	Bozeman, Montana

Primary U.S. Work Locations	
Montana	Virginia

Project Transitions

 **December 2009:** Project Start **February 2012:** Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.5 Lasers